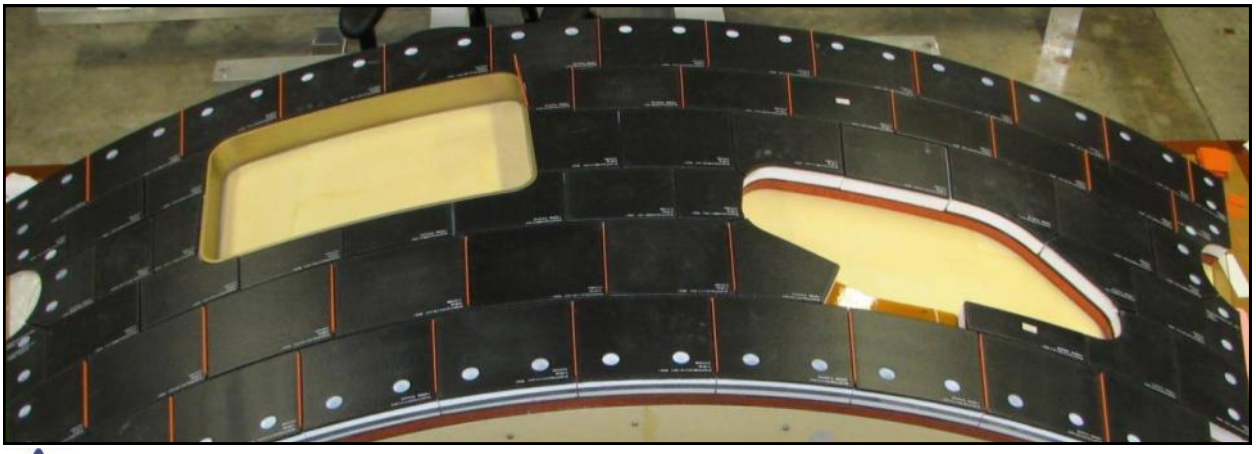
ORION
CREW EXPLORATION VEHICLE

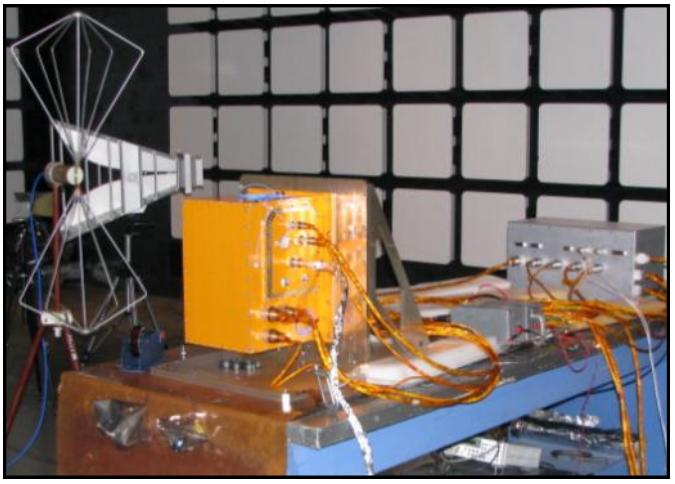
WEEKLY ACCOMPLISHMENTS

01.29.10



United Space Alliance at Kennedy Space Center has completed the tile pre-fit installation on Panel E (shown above). This panel is part of the Thermal Protection System (TPS) that will be used on the Ground Test Article (GTA) to better understand how Orion environments affect tiles. New CAD modeling methods and tight tolerance composite panels have improved tile installation methods over prior space shuttle processes.

The Sensor Test for Orion Relative Navigation Risk Mitigation (STORRM) team began risk reduction testing of the navigation unit at Ball Aerospace & Technology Company. The Sensor Enclosure Assembly (SEA) and Avionics Enclosure Assembly (AEA) were electrically integrated and powered on (shown right.) The picture in the banner shows the Class 3 docking target augmented with the reflective elements (minus the standoff cross with reflective element) (left) and the chart used for docking camera images (right) used during Electromagnetic Interference (EMI) testing.

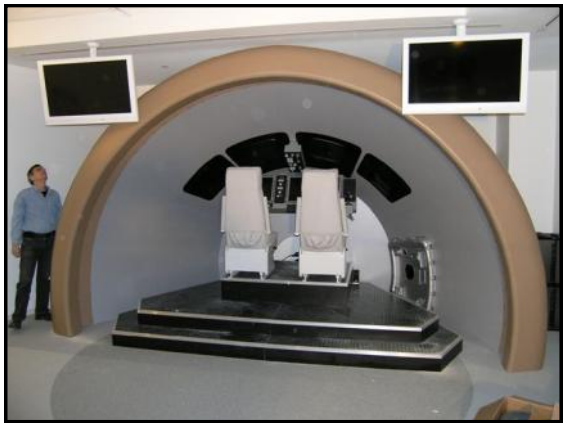


The Low Impact Docking System (LIDS) Ground Test Article (GTA) has been mounted on the vibration test fixture (shown left) for acceptance random vibration and sinusoidal vibration testing. Accelerometers have been mounted on the test article and are currently being interfaced with the data collection system. Random vibration testing has begun with sinusoidal testing to follow.

Ongoing renovations continue at the Space Power Facility in Sandusky, Ohio. A special mixture of self-consolidating concrete was poured to a height of 15.5 feet in the Reverberant Acoustic Test Facility (RATF). This first vertical wall segment begins creation of the 'horn room,' (shown left) a room containing 36 nitrogen-driven acoustic modulators with horns to create overall sound pressure levels of 163 dBA (decibels adjusted) in the adjacent 101,500 cubic foot reverberant chamber. The RATF is one of two new test facilities under construction. The other is the Mechanical Vibration Facility (MVF), a three–axis servo-hydraulic shaker table. The two facilities will test the Orion Crew Exploration Vehicle and other spacecraft with simulated vibro-acoustic loads that are experienced during launch and supersonic ascent conditions.

Communications and Public Engagement

Shown top and bottom left is the Lockheed Martin Global Vision Center located in Washington, DC. The mockup allows a person to experience the feel of the Orion Crew Capsule cockpit and dock to the International Space Station or fly near an asteroid, or other spacecraft. The monitors in the cockpit provide a view as Orion approaches the object to dock, while the windows in the capsule provide a view of space and a view of the approach. The two large monitors on the outside upper left and right side of the capsule provide the casual bystander a view of Orion's position as related to the object it is approaching.



The *CNN* series on stimulus funds, which includes a segment on the work being done at Michoud on the Orion Crew Module Ground Test Article, is scheduled to air this week. The feature includes an interview with Lockheed Martin's Jim Bray, CM/Service Module manager, with CNN reporter John Couwels.